Effect of various types of ENSO events on moisture conditions in the humid and sub-humid tropics

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Supplementary materials

In Figures S1-S3 the differences between ENSO/dryness indices and ENSO/precipitation correlations are presented. These differences can be interpreted as follow: in the area of positive correlations of ENSO/dryness indices and ENSO/precipitation (Figures 1-3 of the paper) the positive difference in Figures S1-S3 corresponds to higher correlation between ENSO and dryness indices than between ENSO and precipitation; in the area of negative correlation of ENSO/dryness indices and ENSO/precipitation (Figures 1-3 of the paper) the positive difference in Figures S1-S3 corresponds to lower correlations between ENSO and dryness indices than between ENSO and precipitation (Figures 1-3 of the paper) the positive difference in Figures S1-S3 corresponds to lower correlations between ENSO and dryness indices than between ENSO and precipitation and vice versa.



Figure S1: The difference between ENSO/dryness indices and ENSO/precipitation correlations for EP El Niño events



Figure S2: The same as Figure S1 but for CP El Niño events



Figure S3: The same as Figure S1 but for La Niña events.



Figures S4. The Walker circulation cell (averaged between $5^{\circ}S-5^{\circ}N$) in MAM. The composites for a) EP El Niños b) CP El Niños c) La Niña (see Table 1 for selected events). The arrows are the vectors of wind velocity: divergent zonal wind (m/s) along the horizontal direction , pressure vertical velocity (Pa/s) * 10^{-2} along the vertical direction; the color field is the value of the pressure vertical velocity (Pa/s) * 10^{-2} .



Figure S5 The same as Figure S4 but for JJA.



Figure S6: The same as Figure S4 but for SON.



Figure S7: The composites of dryness indices during DJF (left column) and MAM (right column) seasons of CP El Niño years (see Table 1 for selected events).



Figure S8: The same as Figure S1 but for JJA (left column) and SON (right column) seasons



Figure S9: The same as Figure S1 but for La Niña years (see Table 1 for selected events).



Figure S10: The same as Figure S2 but for La Niña years (see Table 1 for selected events).



Figure S11. The Hadley circulation cells over (a,d,g) Indonesia Australia (averaged between 90°E-160°E); (b,e,h) Africa (averaged between 20°W-50°E); (c,f,j,i) South America (averaged between 30°W-80°W) in MAM. The composites for EP El Niños (upper panel), CP El Niños (middle panel), La Niña (bottom panel) (see Table 1 for selected events). The arrows are the vectors of wind velocity: divergent meridional wind (m/s) along the horizontal direction, pressure vertical velocity (Pa/s) * 10^{-2} along the verticaldirection; the color field is the value of the pressure vertical velocity (Pa/s)* 10^{-2} .



Figure S12: The same as Figure S8 but for JJA.



Figure S13: The same as Figure S8 but for SON